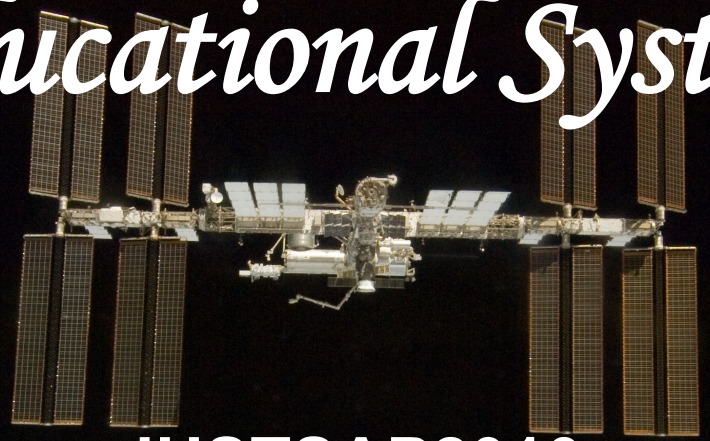
KIBO Hi-Vision EarthView Educational System



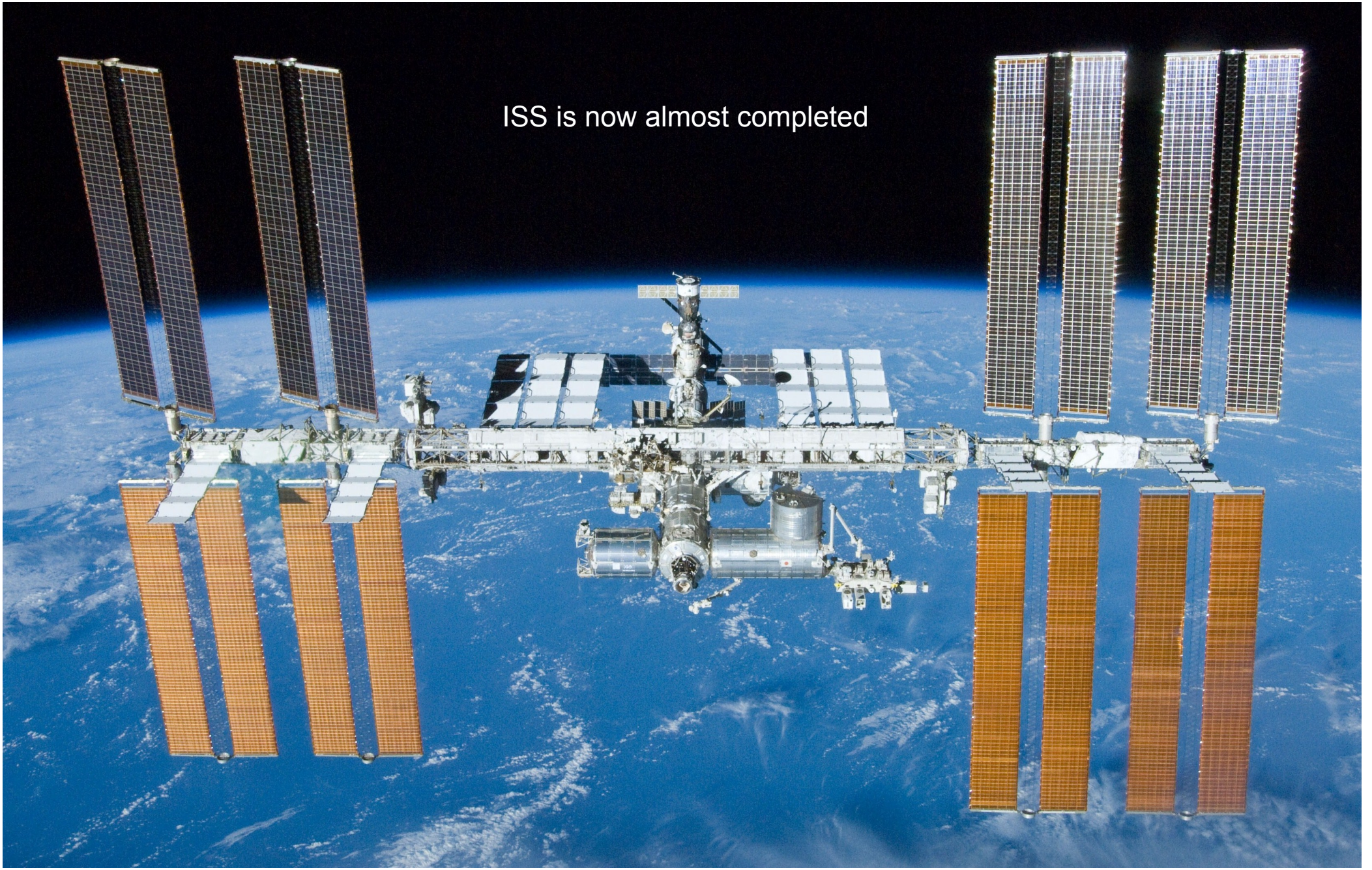
JUSTSAP2010

15 November, 2010

Susumu Yoshitomi

Japan Space Forum

S127E011246


ISS is now almost completed

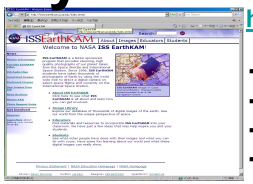
What is *KIBO Hi-Vision EarthView*

- "KIBO Hi-Vision EarthView" is a JSF lead Educational System enabling students, teachers, and the public to receive "live" high definition television (Hi-Vision) images from KIBO.
- We expect that Hi-Vision images will be distributed to young generations of not only Japan but also any other countries, especially Asian and Pacific Region countries.
- High school or Junior High school students request to take "live" images of specific locations around the world.
- The live Hi-Vision image viewing and accompanying learning guides are fantastic resources to study global environmental problems, natural disasters, Earth and space science, geography, geology, social study, culture, communications, and so on.

KIBO Hi-Vision EarthView System Overview

@School or Museum

Entry and Image request



http://www.hdtvearthview.jp/

- Entry for participants
- Student's Guides
- Educator's Gude
- ISS orbital simulation
- Issuing images requests

Hi-Vision Cameras on ISS/ KIBO

JSF Mission Operation Center

HD Images

Image Request

Remote operation of HD Camera

HD Images

Data Base for images

HD Images

http://datasystem.hdtvearthview.jp/

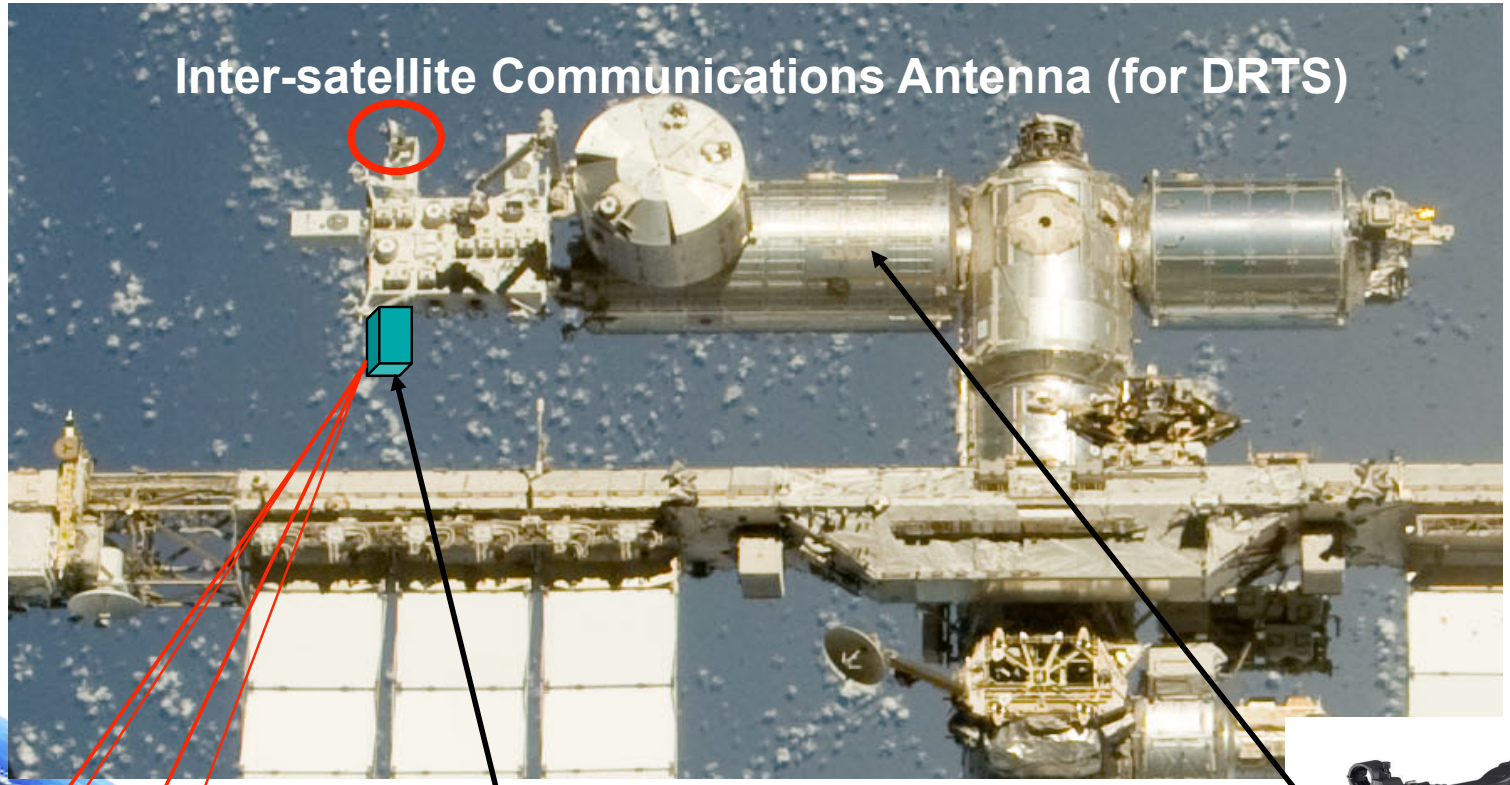
I/F Box

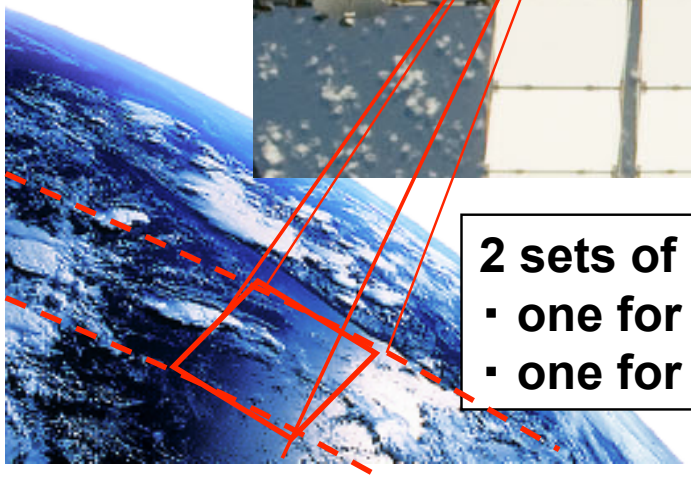
@JAXA

@JSF/Tokyo

KIBO Operation Center @TKSC/JAXA

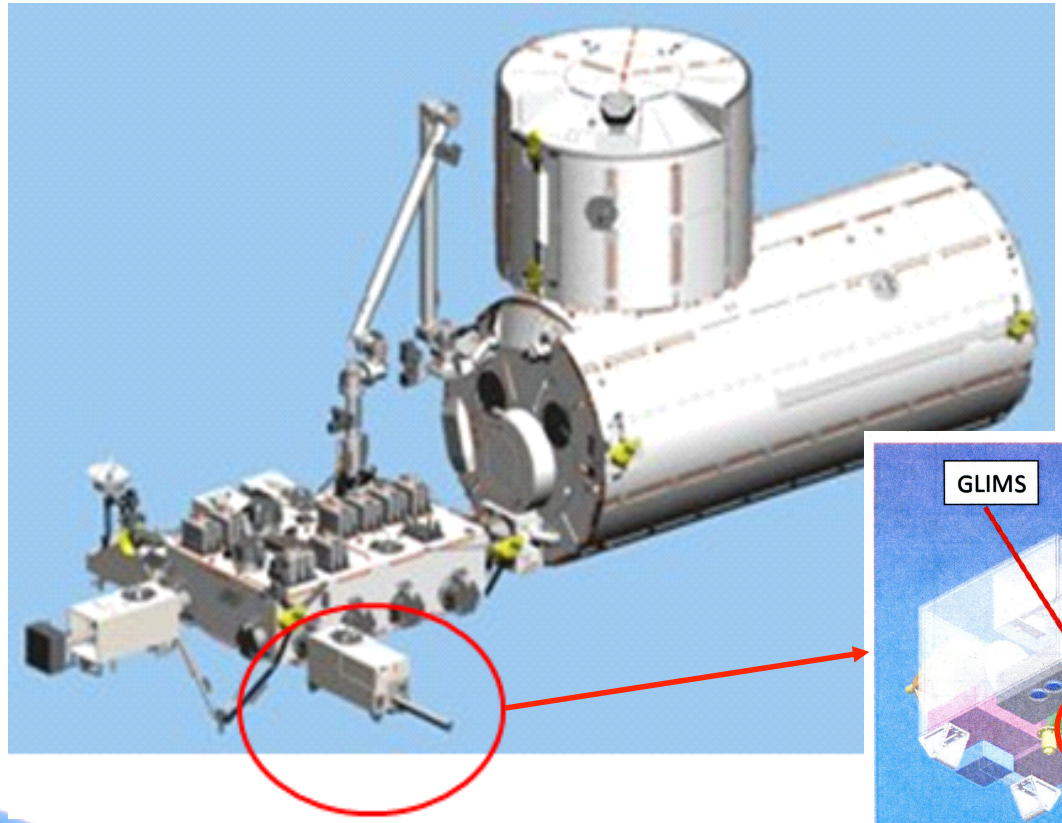
Location of Hi-Vision Cameras on KIBO



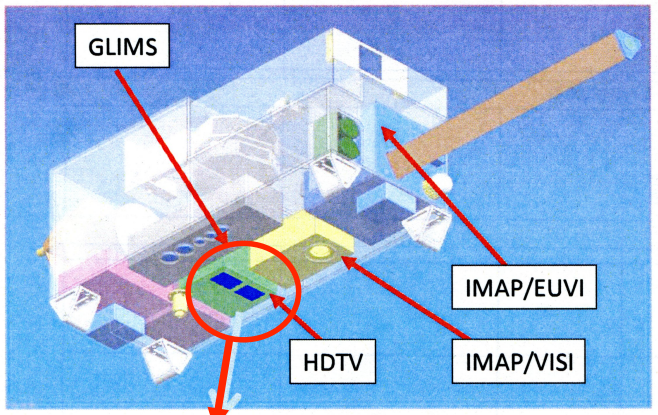


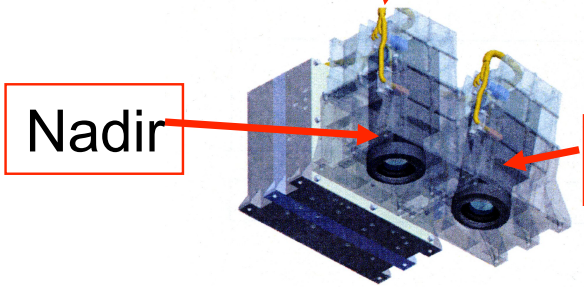
2 sets of Cameras on exposed facility
- **one for Nadir**
- **one for 10 deg tilted to Nadir**

Hi-Vision Camera inside KIBO

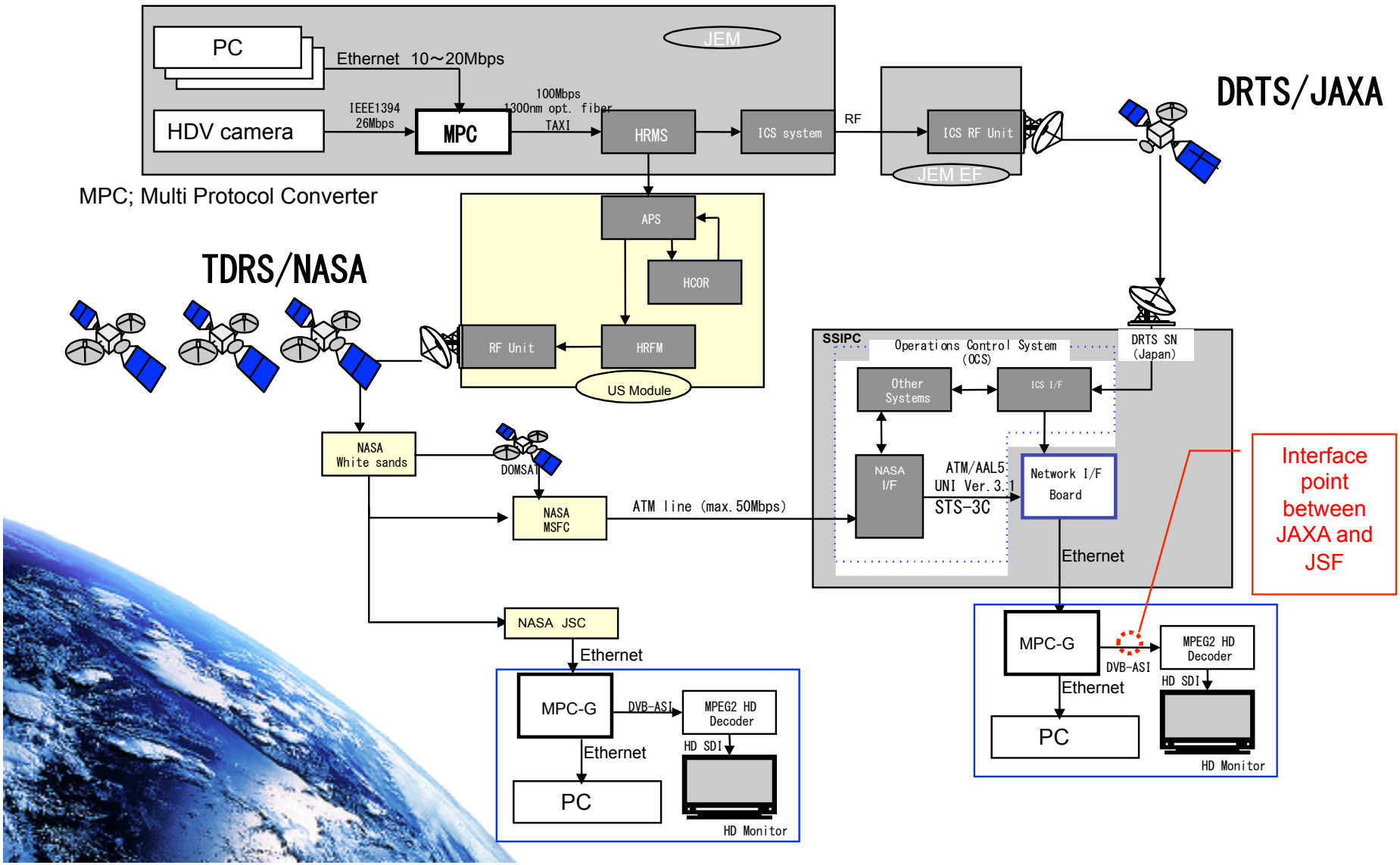


2 Hi-Vision cameras
are installed
in exposed payload

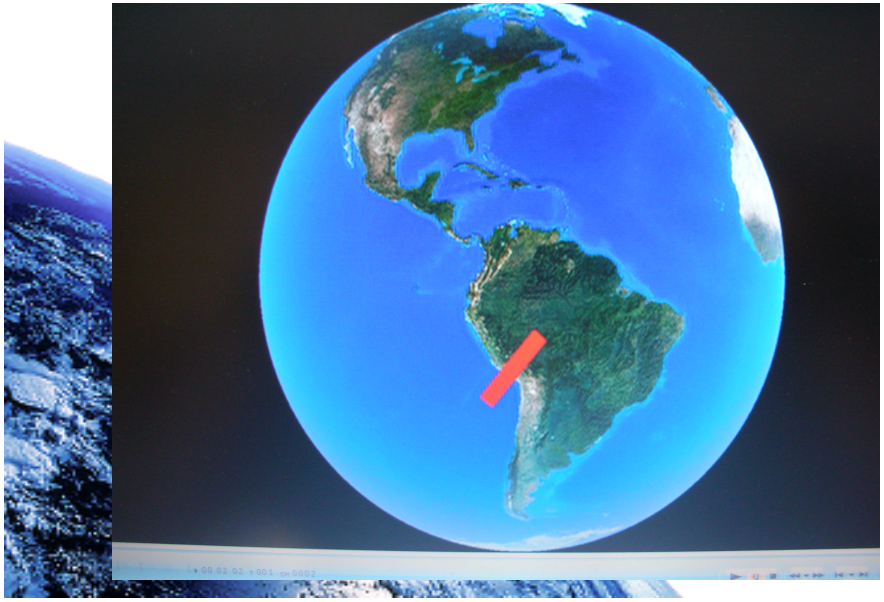


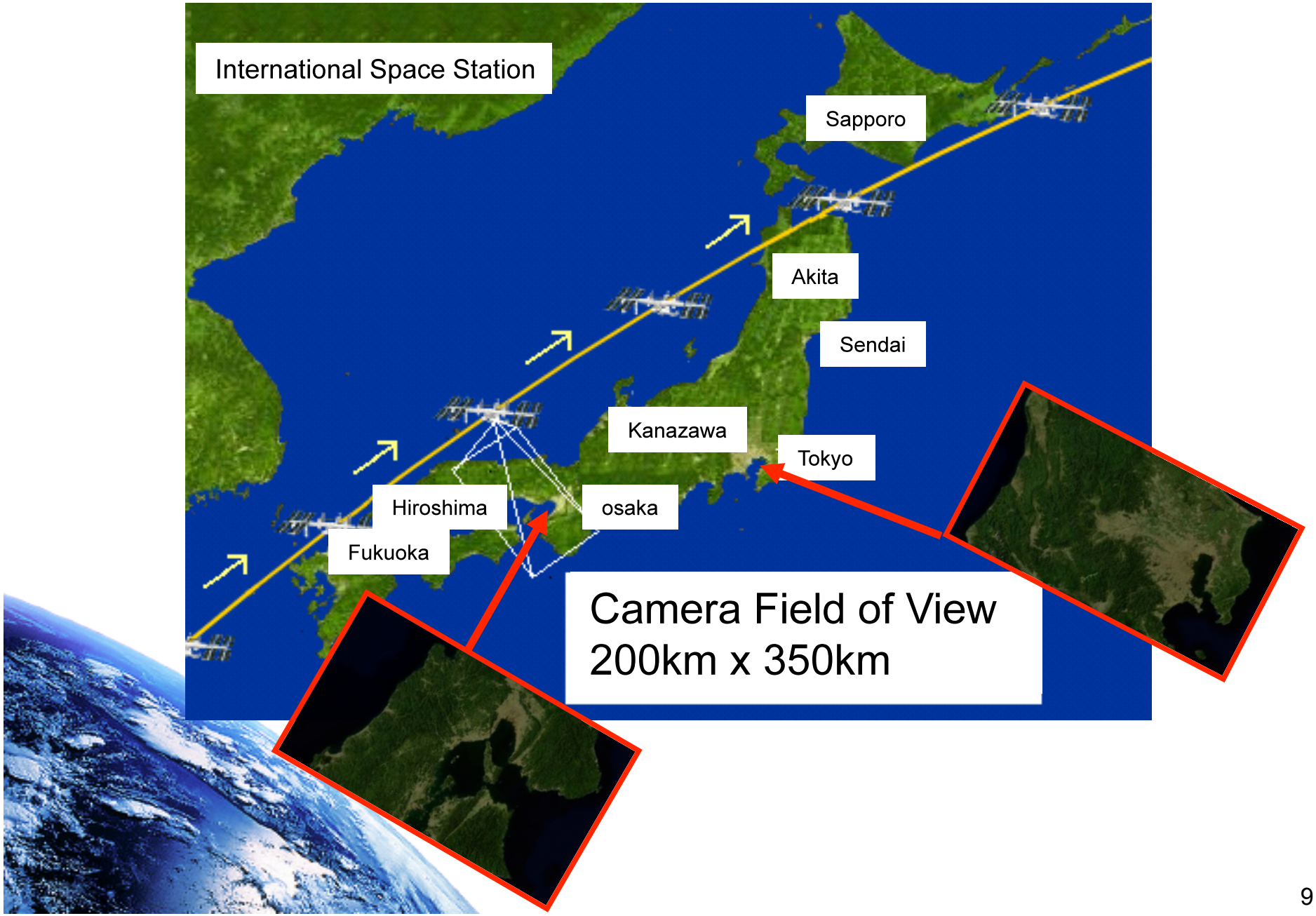


Hi-Vision images signal flow from ISS/KIBO to ground



Request taking target areas in any places around the world

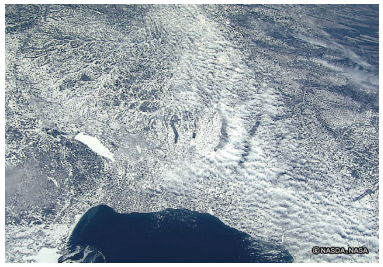


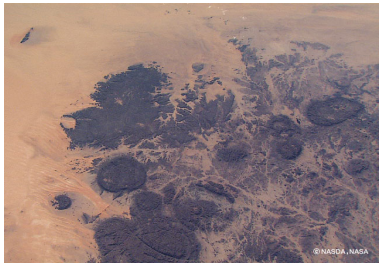

International Space Station
Sapporo
Akita
Sendai
Kanazawa
Tokyo
Hiroshima
osaka
Fukuoka
Camera Field of View
200km x 350km

Possible Studies

With *KIBO Hi-Vision EarthView*, participating school students can…

- Share the excitement of a JAXA space mission
- Participate in real-time, cutting edge studies in many fields, including
  - Earth Science
  - Geology
  - Physics
  - Geography
  - Climates changes
  - Disaster management
  - History (Space Archeology)
  - …and many more!





Student Participation in the ISS EarthKAM, 2001 - 2006

Table I. Student participation in the EarthKAM experiment on ISS, 2001–April 2006.

EarthKAM Session	Expedition	No. Schools	No. Students	No. Photos	No. Countries	No. Schools per country														
						U.S.	Argentina	Australia	Belgium	Brazil	Canada	Chile	Germany	Italy	Japan	Mexico	New Zealand	Puerto Rico*	South Korea	Spain	United Kingdom
Oct 2001	3	18	1,134	557	1	18															
Feb 2002	4	26	1,638	809	1	26															
Mar 2002	4	21	1,323	422	1	21															
Nov 2002	5	10	630	866	2	9									1						
Jan 2003	6	27	1,701	753	3	25									1	1					
Apr 2003	6	69	4,347	696	5	65							1		1	1		1			
May 2003	6	27	1,701	1,832	2	25									2						
Jul 2003	7	10	630	791	2	8									2						
Nov 2003	8	46	2,898	627	2	45									1						
Jan 2004	8	58	4,111	867	4	53						1	1		2					1	
May 2004	9	39	4,148	1,101	5	34					1		1		2					1	
Jul 2004	9	27	214	719	5	23					1		1		1					1	
Oct 2004	10	45	3,405	958	5	41					1				1					1	1
Feb 2005	10	137	9,046	1,923	8	128					2		1	1	2	1		1		1	
Apr 2005	11	115	8,344	1,337	6	109	1				1				2					1	1
Jul 2005	11	45	1,923	968	4	41					2		1		1						
Oct 2005	12	119	9,451	1,660	6	112	1			1					3	1				1	
Feb 2006	12	118	9,004	1,974	9	108	1		1		1		2		2		1			1	1
Apr 2006	13	105	5,717	1,196	8	96	1	1			2		1		2				1		1
Total		**1,062**	**65,648**	**20,056**	**16**	**987**	**4**	**1**	**1**	**1**	**11**	**1**	**9**	**1**	**26**	**4**	**1**	**2**	**1**	**8**	**4**

Inspiring next generations through ISS/KIBO utilization

Mt. FUJI

ANDES

SCOTTSLAND

JSF Japan Space Forum